

AMENDMENTS TO THE CLAIMS

(IN FORMAT COMPLIANT WITH THE REVISED 37 CFR 1.121)

Please cancel claims 3, 14 and 25-33 without prejudice.

1. (CURRENTLY AMENDED) A method for encoding  $K > 1$  pictures of video, comprising the steps of:

(a) dividing each of said  $K$  pictures into an  $m > 1$  row by an  $n > 1$  column array of coding units; and

5 (b) selecting a pseudo random pattern of said coding units for refreshing during each of said  $K$  pictures, each of said pseudo random patterns selected during any given one of said  $K$  pictures including a sequence of one or more of said coding units; and

10 (c) during at least one of said  $K$  pictures, selecting a plurality of said sequences of a fixed length  $q$  with said sequences being offset from each other by  $q \cdot K$ ,

wherein (i) each of said coding units selected for refreshing during a  $k^{\text{th}}$  picture of said  $K$  pictures occupy different positions than each of said coding units selected for refreshing during a preceding one of a 1<sup>st</sup> to a  $(k-1)^{\text{th}}$  pictures of said  $K$  pictures and (ii) each of said positions from said  $K$  pictures is selected for refreshing once over said  $K$  pictures.

15 2. (PREVIOUSLY PRESENTED) The method of claim 1, wherein said coding units are macroblocks and said positions are macroblock positions.

3. (CANCELED)

4. (PREVIOUSLY PRESENTED) The method of claim 1,  
further comprising the steps of:

initializing a length counter to a first constant and a  
frequency counter to a second constant; and

5 during each of said K pictures:

if said length counter is equal to a fixed length  
q then (i) setting said length counter to said first constant, (ii)  
resetting said frequency counter to said second constant minus one  
if said frequency counter equals K and (iii) incrementing said  
10 frequency counter;

counting a next to-be-processed coding unit of said  
coding units in sequential order and incrementing said length  
counter for said next to-be-processed coding unit; and

15 selecting said next to-be-processed coding unit for  
refreshing if said frequency counter is said second constant.

5. (PREVIOUSLY PRESENTED) The method of claim 1,  
wherein a fixed length q for a plurality of said sequences is (i)  
an exact divisor of a number of said coding units in each of said  
K pictures, (ii) less than said number of said coding units in each  
of said K pictures and (iii) greater than one.

6. (ORIGINAL) The method of claim 5 wherein K is free of a common divisor with  $m \cdot n/q$ , other than 1.

7. (PREVIOUSLY PRESENTED) The method of claim 4, wherein said K pictures are a plurality of field pictures of a plurality of interlaced frames, each of said coding units is an interlaced field coding unit and said interlaced field coding units from a single given frame of said interlaced frames are refreshed during sequential pictures k and k+1 of said K pictures, the method further comprising the steps of:

if a last of said coding units at a last of said field pictures of one of said interlaced frames is reached, setting a frame counter equal to said frequency counter; and

if said last coding unit is reached, setting said frequency counter equal to said frame counter.

8. (PREVIOUSLY PRESENTED) The method of claim 1, wherein each of said K pictures is a field picture of an interlaced frame, each of said coding units is an interlaced field coding unit and said interlaced field coding units from a single given frame of said interlaced frames are refreshed during sequential pictures k and k+1 of said K pictures.

9. (PREVIOUSLY PRESENTED) The method of claim 1, wherein said pseudo random patterns are decorrelated among said K pictures.

10. (PREVIOUSLY PRESENTED) The method of claim 9,  
wherein a starting and an ending coding unit of said coding units  
in each of a plurality of said sequences within each of said K  
pictures are located in different columns of said array over  
5 successive ones of said K pictures.

11. (PREVIOUSLY PRESENTED) The method of claim 9,  
wherein (i) at least a first one of said sequences starts at a  
first position of said positions which is offset from a leftmost  
position of said positions in a first row of said array containing  
5 a beginning of said first sequence by one or more of said positions  
and (ii) a second one of said sequences ends at a second position  
of said positions which is offset from a rightmost position of said  
positions in a second row of said array containing an end of said  
second sequence by one or more of said positions.

12. (CURRENTLY AMENDED) An apparatus comprising:  
a source for supplying  $K > 1$  pictures of video, each  
divided into an  $m > 1$  row by an  $n > 1$  column array of coding units; and  
an inter/intra decision circuit for selecting a pseudo  
5 random pattern of said coding units for refreshing during each of  
said K pictures, each of said pseudo random patterns selected  
during any given one of said K pictures including a sequence of one  
or more of said coding units,

wherein (i) each of said coding units selected for  
10 refreshing during a  $k^{\text{th}}$  picture of said K pictures occupy different  
positions than each of said coding units selected for refreshing  
during a preceding one of a 1<sup>st</sup> to a (k-1)<sup>th</sup> pictures of said K  
pictures, and (ii) each of said positions from said K pictures is  
selected for refreshing once over said K pictures and (iii) said  
15 inter/intra decision circuit is also for, during at least one of  
said K pictures, selecting a plurality of said sequences of a fixed  
length q with said sequences being spaced from each other by  $q \cdot K$  of  
said positions.

13. (PREVIOUSLY PRESENTED) The apparatus of claim 12,  
wherein said coding units are macroblocks and said positions are  
macroblock positions.

14. (CANCELED)

15. (CURRENTLY AMENDED) The apparatus of claim 12,  
wherein the inter/intra decision circuit is also for:

initializing a length counter to a first constant and a  
frequency counter to a second constant; and

5 during each of said K ~~frames~~ pictures:

if said length counter is equal to q then (i)  
setting said length counter to said first constant, (ii) resetting  
the frequency counter to the second constant minus one, if the

frequency counter equals K and (iii) incrementing said frequency  
10 counter;

counting a next to-be-processed coding unit of said  
coding units in sequential order and incrementing said length  
counter for said next to-be-processed coding unit; and

selecting said next to-be-processed coding unit for  
15 refreshing if said frequency counter is said second constant.

16. (PREVIOUSLY PRESENTED) The apparatus of claim 12,  
wherein a fixed length q for a plurality of said sequences is (i)  
an exact divisor of a number of said coding units in each of said  
K pictures, (ii) less than said number of said coding units in each  
of said K pictures and (iii) greater than one.

17. (ORIGINAL) The apparatus of claim 16 wherein K is  
free of a common divisor with  $m \cdot n/q$ , other than 1.

18. (PREVIOUSLY PRESENTED) The apparatus of claim 15,  
wherein each of said K pictures is a field picture of an interlaced  
frame, each of said coding units is an interlaced field coding unit  
and said interlaced field coding units from a single given frame of  
5 said interlaced frames are refreshed during sequential pictures k  
and  $k+1$  of said K pictures, wherein said inter/intra decision  
circuit is also for:

if a last of said coding units at a last of said field pictures of one of said interlaced frames is reached, setting a  
10 frame counter equal to said frequency counter; and

if said last coding unit is reached, setting said frequency counter equal to said frame counter.

19. (PREVIOUSLY PRESENTED) The apparatus of claim 12, wherein each of said K pictures is a field picture of an interlaced frame, each of said coding units is an interlaced field coding unit and said interlaced field coding units from a single given frame of  
5 said interlaced frames are refreshed during sequential pictures k and k+1 of said K pictures.

20. (PREVIOUSLY PRESENTED) The apparatus of claim 12, wherein said pseudo random patterns are decorrelated among said K pictures.

21. (PREVIOUSLY PRESENTED) The apparatus of claim 20, wherein a starting and an ending coding unit of said coding units in each of a plurality of said sequences within each of said K pictures are located in different columns of said array over  
5 successive ones of said K pictures.

22. (PREVIOUSLY PRESENTED) The apparatus of claim 20, wherein (i) at least a first one of said sequences starts at a first position of said positions which is offset from a leftmost

position of said positions in a first row of said array containing  
5 a beginning of said first sequence by one or more of said positions  
and (ii) a second one of said sequences ends at a second position  
of said positions which is offset from a rightmost position of said  
positions in a second row of said array containing an end of said  
second sequence by one or more of said positions.

23. (CANCELED)

24. (CURRENTLY AMENDED) A storage medium for storing a  
video signal configured to execute the steps of claim 1 comprising  
~~K>1 pictures each being divided into an m>1 by an n>1 array of~~  
~~coding units, each of said K pictures including a pseudo random~~  
5 ~~pattern of said coding units being refreshed, each of said pseudo~~  
~~random patterns during any given one of said K pictures including~~  
~~a sequence of one or more of said coding units, wherein (i) each of~~  
~~said coding units selected for refreshing during a k<sup>th</sup> picture of~~  
~~said K pictures occupy different positions than each of said coding~~  
10 ~~units selected for refreshing during a preceding one of a 1<sup>st</sup> to a~~  
~~(k-1)<sup>th</sup> pictures of said K pictures and (ii) each of said positions~~  
~~from said K pictures is selected for refreshing once over said K~~  
~~pictures.~~

25. (CANCELED)

26. (CANCELED)

27. (CANCELED)

28. (CANCELED)

29. (CANCELED)

30. (CANCELED)

31. (CANCELED)

32. (CANCELED)

33. (CANCELED)

34. (NEW) A method for encoding  $K > 1$  pictures of video,  
comprising the steps of:

(a) dividing each of said  $K$  pictures into an  $m > 1$  row by  
an  $n > 1$  column array of coding units;

(b) selecting a pseudo random pattern of said coding  
units for refreshing during each of said  $K$  pictures, each of said  
pseudo random patterns selected during any given one of said  $K$   
pictures including a sequence of one or more of said coding units;

(c) initializing a length counter to a first constant  
and a frequency counter to a second constant; and

(c) during each of said  $K$  pictures:

if said length counter is equal to a fixed length q then (i) setting said length counter to said first constant, (ii) resetting said frequency counter to said second constant minus one  
15 if said frequency counter equals K and (iii) incrementing said frequency counter;

counting a next to-be-processed coding unit of said coding units in sequential order and incrementing said length counter for said next to-be-processed coding unit; and

20 selecting said next to-be-processed coding unit for refreshing if said frequency counter is said second constant,

wherein (i) each of said coding units selected for refreshing during a  $k^{\text{th}}$  picture of said K pictures occupy different positions than each of said coding units selected for refreshing 25 during a preceding one of a 1<sup>st</sup> to a (k-1)<sup>th</sup> pictures of said K pictures and (ii) each of said positions from said K pictures is selected for refreshing once over said K pictures.

35. (NEW) An apparatus comprising:

a source for supplying  $K > 1$  pictures of video, each divided into an  $m > 1$  row by an  $n > 1$  column array of coding units;

an inter/intra decision circuit for selecting a pseudo 5 random pattern of said coding units for refreshing during each of said K pictures, each of said pseudo random patterns selected during any given one of said K pictures including a sequence of one or more of said coding units,

wherein (i) each of said coding units selected for  
10 refreshing during a  $k^{\text{th}}$  picture of said K pictures occupy different  
positions than each of said coding units selected for refreshing  
during a preceding one of a 1<sup>st</sup> to a (k-1)<sup>th</sup> pictures of said K  
pictures, (ii) each of said positions from said K pictures is  
selected for refreshing once over said K pictures, and (iii) said  
15 inter/intra decision circuit is for:

initializing a length counter to a first constant and a  
frequency counter to a second constant; and

during each of said K pictures:

if said length counter is equal to q then (i)  
20 setting said length counter to said first constant, (ii) resetting  
the frequency counter to the second constant minus one, if the  
frequency counter equals K and (iii) incrementing said frequency  
counter;

counting a next to-be-processed coding unit of said  
25 coding units in sequential order and incrementing said length  
counter for said next to-be-processed coding unit; and

selecting said next to-be-processed coding unit for  
refreshing if said frequency counter is said second constant.